CLAIMS AMENDMENTS

1. (Previously Presented) A friction stir welding method according to which workpieces to be welded are positioned on a work-table and by means of clamping device clamped to one another and/or to the work-table and according to which a rotating welding means is arranged to move along a joint between the workpieces while being pressed against said workpieces during the welding, wherein additional heat is supplied to the joint prior to and/or during the welding operation, in excess of the frictional heat generated in the joint from the rotation of the welding means and of any other heat that may be supplied to the joint in any other manner by the welding means.

2. (Original) A method as claimed in claim 1, wherein pre-heating the joint to a maximum of 250°C below the fusion temperature of the material of the joint.

3. (Previously Presented) A friction stir welding method according to which workpieces to be welded are positioned on a work-table and by means of clamping device clamped to one another and/or to the work-table and according to which a rotating welding means is arranged to move along a joint between the workpieces while being pressed against said workpieces during the welding, wherein additional heat is supplied to the joint prior to and/or during the welding operation, in excess of the frictional heat generated in the joint from the rotation of the welding means and of any other heat that may be supplied to the joint in any other manner by the welding means, and the joint is heated by a heating element positioned underneath the joint.

4. (Previously Presented) A method as claimed in claim 1, wherein the joint is supported by a subjacent backing device which is preheated to a temperature in excess of 100°C.

5. (Previously Presented) A method as claimed in claim 4, wherein the backing device is heated to a temperature in the range of 150-250°C.

6. (Previously Presented) A method as claimed in claim 4, wherein the backing device is heated to a temperature in the range of 500-1000°C.

7. (Previously Presented) A method as claimed in claim 6, wherein the backing device is heated by a heating coil built into the backing device.

8. (Previously Presented) An apparatus for friction stir welding, comprising a work-table supporting workpieces to be welded, at least one clamping device for clamping the workpieces to one another and/or to the work-table, and a welding means adapted to be advanced along a joint between the workpieces while being pressed against said workpieces during the welding, and a heating element for supply of additional heat to the joint prior to and/or during the welding operation, in excess of the frictional heat generated in the joint from the rotation of the welding means and of any other heat that may be supplied to the joint in any other manner by the welding means.

9. (Previously Presented) An apparatus for friction stir welding, comprising a work-table supporting workpieces to be welded, at least one clamping device for clamping the workpieces to one another and/or to the work-table, a welding means adapted to be advanced along a joint between the workpieces while being pressed against said workpieces during the welding and, the apparatus comprises a heating element positioned underneath the joint for supply of additional heat to the joint prior to and/or during the welding operation, in excess of the frictional heat generated in the joint from the rotation of the welding means and of any other heat that may be supplied to the joint in any other manner by the welding means.

10. (Previously Presented) An apparatus as claimed in claim 8, wherein a backing device positioned underneath the joint.

11. (Previously Presented) An apparatus as claimed in claim 10, wherein the backing device is adapted to be heated by the heating element.

12. (Previously Presented) An apparatus as claimed in claim 11, wherein the heating element is a heating coil built into the backing device.

13. (Previously Presented) A method as claimed in claim 3, further comprising the step of pre-heating the joint to a maximum of 250°C below the fusion temperature of the material of the joint.

14. (Previously Presented) A method as claimed in claim 13, wherein the joint is supported by a subjacent backing device which is preheated to a temperature in excess of 100°C.

15. (Previously Presented) A friction stir welding method according to which workpieces to be welded are positioned on a work-table and by means of clamping device clamped to one another and/or to the work-table and according to which a rotating welding means is arranged to move along a joint between the workpieces while being pressed against said workpieces during the welding, wherein additional heat is supplied to the joint prior to and/or during the welding operation, in excess of the frictional heat generated in the joint from the rotation of the welding means and of any other heat that may be supplied to the joint in any other manner by the welding means, and the joint is supported by a subjacent backing device which is preheated to a temperature in excess of 100°C.

16. (Previously Presented) A method as claimed in claim 15, wherein the backing device is heated to a temperature in the range of 150-250°C.

17. (Previously Presented) A method as claimed in claim 15, wherein the backing device is heated to a temperature in the range of 500-1000°C.

18. (Previously Presented) A method as claimed in claim 15, wherein the backing device is heated by a heating coil built into the backing device.

19. (Previously Presented) An apparatus as claimed in claim 9, wherein a backing device positioned underneath the joint.

20. (Previously Presented) An apparatus as claimed in claim 19, wherein the backing device is adapted to be heated by the heating element.

21. (Previously Presented) An apparatus as claimed in claim 20, wherein the heating element is a heating coil built into the backing device.

22. (Previously Presented) A friction stir welding method according to which workpieces to be welded are positioned on a work-table and by means of clamping device clamped to one another and/or to the work-table and according to which the start of the welding operation is initiated by inserting a rotating welding means into a joint and then moving said welding means along the joint between the workpieces while pressing said welding means against said workpieces during the welding, wherein additional heat is supplied to the joint in excess of the frictional heat generated in the joint from the rotation of the welding means and of any other heat that may be supplied to the joint in any other manner by the welding means and wherein said

additional heat is supplied by a heating element capable of supplying heat to the joint prior to and during the welding operation.

23. (Previously Presented) A method as claimed in claim 22 wherein the joint is pre-heated to a maximum of 250°C below the fusion temperature of the material of the joint.

24. (Previously Presented) A method as claimed in claim 22 wherein the joint is heated by a heating element positioned underneath the joint.

25. (Previously Presented) A method as claimed in claim 23 wherein the joint is heated by a heating element positioned underneath the joint.

26. (Previously Presented) A method as claimed in claim 22 wherein the joint is supported by a subjacent backing device which is preheated to a temperature in excess of 100°C.

27. (Previously Presented) A method as claimed in claim 26, wherein the backing device is heated to a temperature in the range of 150-250°C.

28. (Previously Presented) A method as claimed in claim 26, wherein the backing device is heated to a temperature in the range of 500-1000°C.

29. (Previously Presented) A method as claimed in claim 26, wherein the backing device is heated by a heating coil built into the backing device.

30. (Previously Presented) A method as claimed in claim 27, wherein the backing device is heated by a heating coil built into the backing device.

31. (Previously Presented) A method as claimed in claim 28, wherein the backing device is heated by a heating coil built into the backing device.

32. (Previously Presented) An apparatus for friction stir welding, comprising a work-table supporting workpieces to be welded, at least one clamping device for clamping the workpieces to one another and/or to the work-table, and a welding means adapted to be advanced along a joint between the workpieces while being pressed against said workpieces during the welding, said apparatus further comprising a heating element capable of supplying additional heat to the joint at any time prior to and during the welding operation, in excess of the frictional heat generated in the joint from the rotation of the welding means and of any other heat

that may be supplied to the joint in any other manner by the welding means and wherein the start of the welding operation is considered to be the instant when the welding probe is inserted into the joint.

33. (Previously Presented) An apparatus as claimed in claim 32 further wherein the heating element is positioned underneath the joint.

34. (Previously Presented) An apparatus as claimed in claim 32 wherein a backing device is positioned underneath the joint.

35. (Previously Presented) An apparatus as claimed in claim 32 wherein the backing device is adapted to be heated by the heating element.

36. (Previously Presented) An apparatus as claimed in claim 35, wherein the heating element is a heating coil built into the backing device.

37. (Previously Presented) An apparatus as claimed in claim 32 wherein the heating element is adapted to heat the joint to a maximum of 250°C below the fusion temperature of the material of the joint.

38. (new) A friction stir welding method according to which workpieces to be welded are positioned on a work-table and by means of clamping device clamped to one another and/or to the work-table and according to which a rotating welding means is arranged to move along a joint between the workpieces while being pressed against said workpieces during the welding, wherein additional heat is supplied to the joint prior to and/or during the welding operation in excess of any heat supplied by the welding means.

39. (New) An apparatus for friction stir welding, comprising a work-table supporting workpieces to be welded, at least one clamping device for clamping the workpieces to one another and/or to the work-table, and a welding means adapted to be advanced along a joint between the workpieces while being pressed against said workpieces during the welding, and a heating element for supply of additional heat to the joint prior to and/or during the welding operation, in excess of any heat supplied by the welding means.

SPECIFICATION AMENDMENTS

Please replace the paragraph beginning on page 6, line 10 of the specification with the following paragraph:

The resulting welded joint, when solidified, is a homogeneous, high-strength joint. It should be appreciated that the invention is not limited to the above embodiments but could be modified in a number of different ways within the scope of the appended claims. For example the backing means 7b could be heated by a heating fluid supplied to the groove 60 or by ~~indirect~~ direct supply of electricity instead of by means of a heating cable 70 built into the groove. Instead of heating the joint via the backing means, the joint could be heated by a heating element, such as a gas burner positioned underneath the joint or in contact with the sides of the joint. Induction heating is another possible method of supplying the additional heat. The apparatus could of course be used for welding together workpieces of other metals or metal alloys than aluminum, such as e.g. titanium or steel. When the apparatus is used to weld together titanium or steel workpieces the backing means should be heated to temperatures in the range of 500-1000°C.